COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

NEW ENGLAND	)	D.T.E. 04-4
POWER COMPANY	)	
	)	

THIRD SET OF INFORMATION REQUESTS OF
THE DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY TO
NEW ENGLAND POWER COMPANY

Pursuant to 220 C.M.R. 1.06(6), the Department of Telecommunications and Energy ("Department") hereby submits to New England Power Company ("NEP" or "Company") the following information requests with respect to the above captioned matter.

DTE 3-1 Please give a metes and bounds description of the parcel(s) of land for which the zoning exemption is being sought.

DTE 3-2 Please refer to the Petition at 1, AJM at 3, and DTE 2-6. The Company has indicated that the existing substation occupies approximately 1.6 acres of land, that approximately 3.1 additional acres of land will be used for substation expansion, and that the substation fence would enclose 4.12 acres of land after expansion. Please state, confirm, or clarify the area of the existing substation, the amount of expansion in Phase 1, the amount of expansion in a later phase, and the ultimate size of the substation area, so as to provide a consistent set of numbers. Also, if different, state, confirm, or clarify areas within the substation fenceline.

DTE 3-3 Please refer to Exhibit AJM-2R. What is the acreage of gravel on the Company's property (a) currently; (b) following Phase I construction, and (c) following the ultimate proposed substation expansion buildout?

DTE 3-4 Please refer to DTE 2-43. Is there a change in the area of impermeable driveway surface area *inside* the fence, along with the indicated reduction *outside* the fence?

DTE 3-5 Please refer to DTE 2-16. Does the response mean that NEP or ISO-NE would reduce the amount of power imported from Hydro-Québec either continuously or during load peaks, until the lost 448 MVA transformer was repaired or replaced, in order to protect substation equipment at Sandy Pond? If so, please explain the harm, if any, to energy producers, transmitters, and/or consumers that would occur from reducing the amount of power imported from Hydro-Québec .

DTE 3-6 Please refer to the Petition at 2, pages 4&5 of Exhibit DML, and DTE 2-16. Is the Company's case that it needs to expand the Wachusett Substation based solely on addressing the "post-contingency overload at Sandy Pond No. 236 Substation which could result in cascading overloads of 345-115 kV transformers throughout New England"? Please explain.

DTE 3-7 NEP evaluated three potential solutions to the contingency of losing one 345-115 kV transformer at Sandy Pond. Please explain whether adding a third transformer at Sandy Pond would be another way to address this contingency.

DTE 3-8 Please refer to the Petition at 2, pages 4&5 of Exhibit DML, and DTE 2-16. If the existing HVDC facility at Sandy Pond will be ramped down following loss of one of the 448 MVA transformers, will that avoid the cascading overloads scenario? Please explain.

DTE 3-9 Please refer to the Petition at 2 and DTE 2-18.

a. How many transformers are needed at Wachusett to address the post-contingency overload of one 448 MVA transformer at Sandy Pond?
b. Please explain why the additional transformers proposed for the ultimate buildout are necessary.

DTE 3-10 Please refer to Exhibit DM at 2, DTE 2-22A, Att., and DTE 2-35. Do the results of the perc test indicate that site soils are suitable for a septic system?

DTE 3-11 Please explain how substation construction will affect traffic and how any traffic impacts be mitigated.

DTE 3-12 Please refer to AJM at 3 and 8, Exhibit AJM-1, and the first foldout plan in Section 4 of FPR-1.

a. What is the distinction between line P-141 and line P-142?
b. Which plan shows one of the 115 kV lines terminating at the substation?

DTE 3-13 Please refer to DTE 1-1(d) and DTE 2-22A, Att.

a. Please explain why R1 is listed as 151 feet closer to T3 than to T4, when the site plan shows T3 about 50 feet east of T4 (center to center) and the residences are to the west.
b. Please explain why R1 is listed as 136 feet closer to T2 than to T4, when the site plan shows T4 as being the closest transformer to R1.
c. Please explain why R2 is listed as 97 feet closer to T4 than to T2, when the site plan shows that R2 is closest to T7.
d. Please explain why R1 is listed as being closest to T7, among the 345/115 kV transformers, and R2 is listed as being closest to T8, when the site plan shows the opposite.

DTE 3-14 Please refer to DTE 1-1(e). At the location called "Residence 1," the nighttime L_{90} is higher than the daytime L_{90}. Please explain any factors identified by the Company that account for nighttime ambient noise being higher than daytime ambient noise.

DTE 3-15 Please refer to DTE 1-1(f) and DTE 1-1, Att. B. The latter is the Company's procedure EDP-LAB 15. Page 1 of EDP-LAB 15 suggests that ambient noise measurements should be made without the influence of certain temporary sources. During which period(s) of ambient measurements was railroad traffic audible at the measurement location(s)?

DTE 3-16 Please refer to DTE 1-1(h) and DTE 1-1, Att. B.

a. Did the Company follow its procedure EDP-LAB 15 in its entirety? If so, please provide step-by-step results. If not, please state which parts of the procedure were followed.
b. Please explain how voltage and capacity (kV and kVA) of a transformer affect sound attenuation.

DTE 3-17 Please refer to DTE 1-1(j), DTE 1-1, Att. D, and DTE 1-1, Att. E.

a. What is the equivalent two-winding rating of the 345/115 kV transformers specified in the power transformer agreement between ABB Inc. and National Grid?
b. Please provide a copy of ANSI/IEEE C57.12.90-1993 and NEMA standards publication No. TR 1-1993 (R2000).
c. Where the power transformer agreement states that the autotransformer guaranteed sound level shall be 72 db for ONAN, does the Company interpret this to mean that ABB guarantees that the average A-weighted sound level of the 345/115 kV transformers, when measured at the factory in accordance with the conditions outlined in ANSI/IEEE C57.12.90-1993, will not exceed 72 decibels relative to 20 microPascals (20 ?Pa)? If not, please state the Company's understanding of the provision.
d. Where the power transformer agreement states that the autotransformer guaranteed sound level shall be 72 db for ONAN, is there any indication how ABB interprets the provision?
e. At what distance from the surface of the transformer will the sound level be 72 dB?

DTE 3-18 Please refer to DTE 2-25, Att., at 6 and fn. 10. Is the sound measurement perimeter that was specified by NEMA in 1944 the same as that used by NEMA in 2004? Please provide supporting documentation.

DTE 3-19 Please refer to Exhibit DML-1, DTE 1-1(j), and DTE 1-1, Att. E.

a. What evidence does NEP have that a 268/358/448 MVA 72/74/75 dBA 345/115 kV autotransformer can be obtained?
b. How was the specification of 72/74/75 dBA determined?
c. Please obtain the sound *power* level, $L_{(W)}$, for such a machine from the manufacturer.
d. What is the directionality of the sound from such a machine?
e. What is the price of a 268/358/448 MVA 72/74/75 dBA 345/115 kV autotransformer, compared to a 268/358/448 MVA 345/115 kV transformer with "standard" sound levels of 87/88/89 dBA?
f. Is the price of 72/74/75 dBA transformers incorporated into the NPV estimate of $42,301,570 for Alternative 2?

DTE 3-20 Please refer to DTE 2-28. How is it that Transformer T2, which appears to have been built in 1988, has decibel numbers so much lower than the other transformers? Is the value of 55.7 dB correct? Was it measured according to the same protocol as the other transformers?

DTE 3-21 Please refer to Exhibit AJM-5. The Company's calculations show 2006 magnetic fields south of the Wachusett substation of 48 mG at the west edge of the right-of-way and up to 92 mG in the right-of-way.

a. Please identify the line phases for the conductors on the O-141 line and the P-142 line, shown in the cross-sectional figures.
b. Has the Company implemented or considered implementing an arrangement of the phases for the O-141 line and the P-142 line serving to minimize magnetic fields from these lines, as a result of cancellation effect? If not already implemented, please discuss the feasibility and cost of implementing phase arrangements to minimize magnetic fields from O-141 and P-142 lines.

DTE 3-22 Please refer to AJM at 6. How high above the ground will the 400-watt floodlights be installed? Is there an angle above which the floodlights do not provide light? Will the floodlights be visible from surrounding locations, when turned on during the night?

DTE 3-23 Please describe the precautions that the Company will take relative to site security during construction including measures to prevent the public, including children, from accessing any construction areas.